

Mussey Grade Road Alliance Comments Regarding Wildland Fire and the Fire Protection Plan (FPP) Based on the Revised Draft Environmental Impact Report (RDEIR) of the Salvation Army; MUP 70-379W2; ER 98-14-023; Sch. No. 2000031058

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I. GENERAL ISSUES

A. Occupancy and season

There are references in the RDEIR to a reduced number of occupants in winter months. For instance on p. 2.3-10, Section F.- Emergency Planning we find:

"Although wildfires can occur any time of the year, they are more likely to become uncontrollable the period of September to February, coinciding with the Santa Ana winds. The proposed project accommodate 615 persons, but the typical Camp population during the period of September will be much lower, around 200 persons, as children would be in school during this period"

All references to "typical" lower occupancy of the facility during the autumn and winter months should be removed from the RDEIR, unless the Salvation Army wishes to codify lower occupancy during this period as a condition of approval. As pointed out previously and repeatedly by the Alliance, the proposed build-out represents a major shift in the usage and capabilities of the present facility; there is no reason to assume that past usage patterns would continue to apply. As one of the few high-occupancy conference centers in eastern San Diego County,¹ there is the potential for high year-round occupancy, and from an emergency planning standpoint it is only prudent to assume that this will be the case unless it is not.

⇒ *Full occupancy of the between 748 and 615 persons overnight suggested for the proposed expansion must be assumed for emergency planning and traffic impact purposes.*

II. TRAFFIC, SAFETY, AND EVACUATION

A. Inadequacy of the bus evacuation plan under emergency conditions

The Army assumes that it can evacuate all visitors and residents of the facility under emergency conditions with two standard school buses. On p. 2.3-11, they state: *Round trip from the Salvation Army Divisional Camp site to the United Methodist Church and back takes approximately 12 to 15 minutes under normal conditions. At that*

¹ In fact, even with the lower number of 615-person occupancy, the project would accommodate more overnight guests than any other facility in the San Diego County backcountry, with the exception of the Barona Casino hotel, which has an occupancy of some 800 persons.

rate, the Camp staff, visitors and campers could be relocated within approximately 1 hour. This is repeated in the Fire Protection Plan on p. 47.

The evacuation planning is totally inadequate for two reasons: First, this plan does not accommodate the between 615 to 748-person potential overnight occupancy and, second, it is completely inappropriate to assume “open roads” during an emergency requiring evacuation of the facility. Significant traffic congestion has been observed on Mussey Grade and on SR-67 during recent wildfire disasters, and it must be assumed that this would be the case in future disasters as well.

B. Inadequacy of the traffic study

Traffic flow was covered in the 2005 submission of the Alliance on this project, and the Alliance remains concerned about traffic impacts in general. The proposed evacuation as described in the RDEIR potentially endangers the lives of everyone on Mussey Grade Road who lives to the south of this facility as discussed in our 2005 submission.

During Alliance discussions in 2006 with the Ramona Fire Marshal, who suggested that he could act as an intermediary with the applicant, the Alliance presented a number of “performance-based” requirements to help prevent adverse impacts to residents by the facility during a wildland fire emergency². The *first* of these requirements read:

- 1. Any increase in Facility occupancy shall not result in a significantly increased evacuation time for any resident of the Mussey Grade corridor based on the most current population figures available (for all residents using Mussey Grade as an egress) during an emergency fire evacuation.
“Significant” is defined as greater than 5%.
...Verification: A traffic simulation of a “worst case” evacuation of the Mussey Grade corridor shall be performed and the worst-case delay time plotted as a function of additional vehicles injected by an Army Facility evacuation.***

Based on communication with the Fire Marshal, the Alliance understood that this document would be communicated to the applicant; the Army’s representatives have referred to it in public discussions, such as at the Ramona Municipal Water District (RMWD). The applicant has known that the Alliance has been concerned about evacuation during wildfire event and the possible adverse effects to residents for a long time. Therefore the Alliance assumed that with the release of the RDEIR revisions to the Fire Protection Plan (FPP) it would include an adequate traffic study. What the Alliance has found, however, is the opposite - the “traffic study” presented in the RDEIR is so inadequate as to be completely without value. Problems include:

² DRAFT Mussey Grade Road resident fire safety requirements; Joseph W. Mitchell, Ph.D. for the Mussey Grade Road Alliance; July 17, 2006. *Attachment B.*

- Traffic measurements were done in the Spring of 2004 - after the Cedar Fire – were conducted before all residents had moved back into the neighborhood.
- Rather than assuming full camp occupancy, the study uses ADTs to determine the load placed upon the road from the evacuation of the facility.
- The base case assumes a “steady state” condition of traffic flow rather than the conditions that arise during an emergency evacuation.
- No modeling or simulation was performed. Rather, the preparer simply looked up “rural highway” in a book and applied this to Mussey Grade Road, with a small weighting factor. It was assumed that traffic would flow uninterrupted as on a rural highway, at nearly the maximum capacity for that highway.
- No allowance was made for traffic merging from side streets, which will be the primary determinant of traffic flow. No intersection modeling was done, even for the 300-car queue from the Salvation Army facility.
- The study assumes that traffic will flow from Mussey Grade onto SR-67, without stopping, at the maximum flow rate of a rural highway.

The results of this traffic study – that there is no danger of congestion on Mussey Grade Road during an evacuation – are referenced in the FPP at p.46.

These assumptions are completely erroneous and render the “traffic study” valueless. See discussion in more detail below. As a result, however, of the fallacious assumptions upon which the traffic study has been performed, the Alliance requests that:

- ⇒ *The Salvation Army shall be directed to do a revised and comprehensive traffic study that fully models the effect of the evacuation of their expanded facility at the proposed full occupancy on the traffic flow on Mussey Grade Road, using appropriate software models and calculation techniques.*
- ⇒ *As facility evacuation is the PRIMARY impact on Mussey Grade resident safety during a wildfire, the Draft RDEIR should be deemed inadequate and should be recirculated for comment after a proper traffic study has been completed.*

1. Measurements of traffic flow were done at a time that does not represent current and future traffic flow.

On p. 2.3-12, the method for determining traffic volume on Mussey Grade Road is described: “A 24-hour road tube count was done on Mussey Grade Road both north and south of Dos Picos Park Road on a weekday in June 2004. This traffic count captured the two-way traffic on Mussey Grade Road for 24-hours.”

This traffic study was conducted in June of 2004, only eight months after the Cedar fire, which destroyed 60-70% of the residences of lower Mussey Grade Road, located south of Dos Picos Park Road. At the time of the survey, not all residents had returned. In particular, the Mussey Grade Village trailer park, which had sustained

significant losses during the fire, not only rebuilt but expanded its operation³. The number estimated from a measurement in 2004 is likely to be much lower than the current number of ADTs.

⇒ *A traffic flow study should be repeated now that the neighborhood has rebuilt.*

2. An incorrect method is used to determine the number of cars emerging from the Salvation Army facility

The RDEIR describes the method used to determine the number of cars that would exit the facility during evacuation on p. 2.3-12: “*The project is calculated to add a maximum of 275 ADT to Mussey Grade Road, or about 140 one-way trips.*”

The use of ADTs to calculate an evacuation scenario for the Salvation Army facility is ***completely incorrect***. ADTs were calculated using what is anticipated to be the typical usage scenario for the facility, with guests arriving on the weekends and reduced traffic during the week. Weekly ADTs are an average, and represent the weekend peaks in traffic flow averaged with the lower flow rates during the week. ***For this reason, ADTs CANNOT be used to correctly estimate camp occupancy.*** Additionally, this is incorrect because there is a much more accurate method to estimate vehicle occupancy: simply assume that all parking spaces are filled. The proposed project is calling for a total of 300 parking spaces, 188 dedicated spaces and 112 overflow spaces. The number 300 should be used for any evacuation planning.

⇒ *A realistic evacuation scenario for the Salvation Army facility MUST assume that at full occupancy all available parking spaces are occupied, and that all of these vehicles will exit the facility onto Mussey Grade Road.*

3. Modeling an evacuation as a smoothly flowing highway and ignoring ingress/egress effects is grossly inadequate

To do the “analysis” required for evacuation, the preparer of the traffic study simply looked up numbers in a book and assumed that the historic winding Mussey Grade Road, a dead-end country road, is a straight and smoothly flowing two-lane highway. We see on p. 2.3-13:

“Several sections of the nationally accepted Highway Capacity Manual (HCM) were reviewed for information. The published HCM is the basis of the majority of the methodology used in signalized/unsignalized intersection calculations, arterial analyses, freeway analysis and two-lane highway calculations.”

³ See Appendix A, attached, letter from Ken and Joanne Gamble, Mussey Grade neighborhood residents who personally attest that traffic density was significantly lower in early 2004. Other residents, including the author and his wife, Diane Conklin, concur in this observation. There was a very significant increase that we noticed in traffic between early 2004 and the present.

*“A commonly accepted hourly capacity for a single two-lane highway lane is 1,700-passenger cars/hour (pc/h). This is confirmed in the HCM. For the purposes of this analysis, Mussey Grade Road is considered to exhibit characteristics more similar to a 2-lane highway than an urban arterial. The latter carries higher volumes and has signalized cross streets. **There are relatively few driveways and intersections along Mussey Grade Road as compared to a typical urban two-lane County roadway. Also, roadway “friction” in terms of opposing vehicles (i.e. southbound vehicles) under evacuation scenarios will be minimal with all outbound traffic heading northbound in one lane. However, given the narrower lanes and lack of shoulder as compared to a proper 2-lane highway, the two-lane highway lane capacity by 20%, resulting in an hourly, per-lane capacity of 1,360 pc/h.”***

“...The peak hour evacuation volumes calculated for Mussey Grade Road are 810 pc/h without the project, and 950 pc/h with the project. The hourly capacity of the road is conservatively estimated at 1,360 pc/h, with factors such as narrow lanes and lack of shoulders accounted for. Thus, the expected volumes are within the capacity either without or with the project. When the retreat at the project site is not operating (when it is not occupied), the project volumes are much less, since two busses will be on-site at all times for evacuation purposes.” [Emphasis added]

This approach ignores the fact that because there are a limited number of access roads onto Mussey Grade, those that exist will function as intersections in a mass evacuation. These will be heavily used, and will constitute an obstruction that will limit traffic flow. In fact, the Salvation Army entrance will be the *primary* intersection controlling traffic flow along Mussey Grade Road. This study conducts no intersection calculations whatsoever but simply assumes that traffic continuously flows along Mussey Grade Road unimpeded to Highway 67.

Using highway capacity to predict delay times is completely inappropriate for an evacuation scenario. The Highway Capacity Manual, cited as the reference for the traffic estimate, notes that simple calculations only apply to steady-state conditions and should not be applied under extraordinary conditions: *“the **Highway Capacity Manual (HCM) methods are generally not appropriate (unless the analyst performs a special intervention) for the evaluation of inclement weather conditions, accidents, or construction activities, queues that are building over both time and space... However some guidelines are identified in Chapter 22 to address these conditions.”***⁴ [Emphasis added] Chapter 22 of the HCM refers to computer modeling methods. A wildland fire situation, with its associated smoke, falling embers, and panic, would not be appropriate for application of Highway Capacity Manual methods as per its own instructions for use.

As stated in previous RDEIR comments, evacuations during the Cedar Fire caused traffic along Mussey Grade Road to grind to a halt. According to an eyewitness account given during the RMWD Cedar fire hearings⁵, the traffic speed at 7:30 a.m. on

⁴ Transportation Research Board; Highway Capacity Manual; HCM2000; Washington, D.C.; www.TRB.org; p. 9-1.

⁵ Ramona Municipal Water District Cedar Fire Hearings, January 2004. <http://www.musseygraderoad.org/CedarIndex.htm>; also available in original audio format from the

Mussey Grade road was some three miles per hour. Perhaps not coincidentally, this is the time at which 100 campers were evacuated from the Salvation Army compound.

A simple calculation demonstrates that using maximum highway capacity is incorrect for determining traffic flow rates during an evacuation. Note that this is a simplified assumption ***and should not form the basis of actual modeling used for this study***. This is presented simply to illustrate the inadequacy of the analysis contained in the RDEIR.

Assuming 800 vehicles are evacuating over a one-hour period would mean one vehicle would pass every 4.5 seconds at an even flow rate. This is not enough time to allow merging of vehicles from side streets; traffic would have to slow or stop to allow evacuating vehicles to enter the Mussey Grade. If 300 additional vehicles enter near the northern end of the road – the location of the Salvation Army camp – and is allowed to merge with traffic traveling northerly on Mussey Grade, each vehicle will need to come to a stop to permit another vehicle to exit. Assuming that each vehicle takes seven seconds to get through this as all-way stop at the Salvation Army, this would mean 14 seconds per pair of cars. Therefore, an unavoidable traffic jam would propagate up Mussey Grade Road as the waiting time is significantly longer than the mean time interval between cars. Assuming a separation of 20 feet per vehicle, the maximum length of this traffic jam would be 16,000 feet, or three miles – nearly to the end of Mussey Grade Road. The time for the 300 cars to be cleared out of the Camp at 14 seconds per pair would be 70 minutes. Hence the evacuation of the Salvation Army Camp at full occupancy could be expected to add over an hour of additional time required for those evacuating from southern Mussey Grade Road.

A consistent estimate can be derived from the Highway Capacity Manual. For an all-way stop intersection and assuming base conditions, it can be assumed that 170 vehicles per hour per approach to achieve Level of Service A, but only 350 vehicles per hour per approach for LOS E⁶. This assumes only 10% left turns, versus the 100% we would expect from the Salvation Army facility, which would be expected to further degrade performance.

⇒ ***Baseline assumptions for direct use of Highway Capacity Manual calculations are NOT met during an emergency wildland fire evacuation, and so planning must be based on appropriate software modeling. As per previous Alliance requests, a full simulation of traffic flow during an evacuation of Mussey Grade Road needs to be performed as part of this RDEIR. This study should model the traffic flow under emergency conditions using a set of realistic assumptions. The traffic study as presented is completely inadequate, and should not be accepted by the County.***

Ramona Municipal Water District, 105 Earlham Rd., P.O. Box 1829, Ramona, CA 92065, USA. The transcript of this section is attached as Appendix C.

⁶ HCM2000; p. 10-35.

- ⇒ *“Good Samaritanism” shall be assumed for modeling traffic on Mussey Grade – in other words that as traffic rates slow and queues or platoons form, residents will allow side traffic to merge. Practically, this means that the Salvation Army exit will be regarded as an all-way stop.*
- ⇒ *Traffic modeling will be done for different timing of Salvation Army evacuation with respect to the neighborhood as a whole.*

4. Assuming egress onto SR-67 at full highway flow rate during an evacuation is a grossly unrealistic assumption.

On p. 2.3-13, the RDEIR states that:

“The evacuation of Mussey Grade Road and other similar roads in the County rely on the expeditious movement of traffic from the minor street to the major street. That is, if traffic congestion on SR-67 precludes the movement of vehicles from Mussey Grade Road on to SR-67, then capacity may be reduced below what is presented in this analysis. However, emergency personnel would be responsible for directing traffic at key intersections, such as SR-67/Mussey Grade Road, during an emergency so that an orderly and expeditious evacuation flow could occur.”

The assumption that SR 67 will be completely open to accept traffic flow off of Mussey Grade Road is completely unrealistic. In fact, with the current “Reverse 9-1-1” system and fire agency practice, large areas are simultaneously evacuated which puts tremendous pressure on traffic arteries and significantly slows traffic. This was observed during the evacuation of Ramona during the Witch Fire.

A quick calculation for this case can be done as well. Once again, this calculation is illustrative and does not preclude the need for a full traffic flow simulation for the evacuation of Mussey Grade.

Assume that the capacity of SR-67 is one vehicle per 3 seconds, and that due to evacuation it is at capacity. While traffic direction might be occurring, it is unlikely that a single feed road such as Mussey Grade would be given significantly more access than the main trunk. Let us assume that 1/5 of the capacity of SR-67 is dedicated to Mussey Grade Road during the evacuation. This means on the average, four vehicles per minute can turn onto SR-67. Total evacuation time for 1,100 vehicles at this rate would be 4½ hours! The traffic jam for 1,100 vehicles assuming 20 feet per vehicle is 4.2 miles – almost the full length of Mussey Grade Road.

Under this assumption, the delay for someone at the rear of the line added by the 300 vehicles evacuated by the Salvation Army facility would be 75 minutes. The linear distance the Salvation Army traffic would add to the traffic jam would be over one mile. The “safe area” of Mussey Grade extends from SR-67 down to Dos Picos Park Road, approximately one mile, at which point dense vegetation begins and extends the remaining length of the road. The Salvation Army facility is roughly one mile south of

Dos Picos Park Road. Hence, evacuation of the facility would cause significant additional exposure of residents south of the facility to vegetation which could be deadly in the case of an encroaching fire.

- ⇒ *A traffic study should be performed that assumes a widespread evacuation and uses realistic modeling of the effect this would have on people trying to evacuate from Mussey Grade Road, and should include congestion on SR-67, which is the sole egress from the area. Under no circumstances should it be assumed that any more than ¼ of the capacity of SR 67 be taken up by vehicles evacuating from Mussey Grade Road.*
- ⇒ *Under no circumstances should expansion of the Salvation Army parking be permitted beyond what is CURRENTLY in place during fire season from September through March unless it can be shown that there are no impacts on resident evacuation using realistic traffic models. Parking sufficient for current Camp occupancy should be paved, and off-pavement parking during fire season should be considered a permit violation.*

III. FIRE AND THE FIRE PROTECTION PLAN (FPP)

In RDEIR comments to date, and in other requirements shared with the RMWD, the Alliance has generally not intervened in on-site safety considerations. It is the responsibility of the Salvation Army to keep the guests at its facility safe, and while the Alliance has made comments on site issues for humanitarian reasons in general we've not been directly involved in issues that don't affect the community outside of the facility. With the most recent FPP, however, which offers the concept of a large – oversized – facility with capacity for 1,300 people that the Salvation Army has offered to shelter neighborhood residents, we now feel an obligation to participate in these discussions as well, since some residents for various reasons might feel that this would be a good option for them in a wildland fire emergency. Therefore, it is incumbent on the Alliance to now provide feedback to improve fire safety for on-site facilities.

A. Shelter-in-Place

The Fire Protection Plan designates the Salvation Army facility as a “Shelter-in-Place” environment, using recent changes to County fire codes to allow this to occur. This has always been a somewhat schizophrenic definition, as noted in both the County fire code and in this Fire Protection Plan (p. 36): “*in case of fire, the preferred plan is relocation, assuming that sufficient time is available to relocate staff and visitors without impacting Mussey Grade Road.*” As shown in the (grossly incorrect) traffic study in the RDEIR, *no* impact is anticipated for a full-scale evacuation of the facility – hence the decision will inevitably be to evacuate. We can assume that both the camp management and the Ramona Fire Department will be operating under the same mistaken assumption of a minimal impact to Mussey Grade Road, should the traffic study in the RDEIR be accepted. This could lead to disastrous consequences.

Even assuming that a sheltering strategy was to be employed, there are a number of factors that would put visitors, staff, and neighbors at risk. These arise both from general problems in the County's concept of "Shelter-in-Place" and from more specific problems with this facility itself.

1. Shelter-in-Place as envisaged by the County is not practiced elsewhere

A key difference between Australia, where sheltering during wildland fire is accepted practice, and San Diego County's implementation of Shelter-in-Place is that the Australians assume that the remaining residents take an active role the prevention of structure ignition. The theory underlying this approach is that structures with sufficient separation from hazardous vegetation will provide good protection of sheltering residents from heat and flame. However, structures are susceptible to ember attack, especially after the flame front has passed. Residents are expected to patrol for embers and secondary ignitions once the heat levels have dropped, and extinguish them.^{7,8} The San Diego Shelter-in-Place (SIP) strategy, on the other hand, relies entirely on the capability of a properly designed structure to withstand ember attack or the presence of firefighting personnel.⁹ While structures can be designed to be highly resistant to ember penetration, a variety of contingencies might still occur which would compromise the structure and allow ignition:

- Windows can be left open
- Maintenance or repair can leave segments of the building exposed
- Gale-force winds may cause damage and allow ember entry
- Embers can penetrate into unanticipated vulnerabilities, such as under roof tiles¹⁰.

There is an internally inconsistent element in the County's SIP standards, as can be clearly seen in the quotation used on p. 36 of the FPP:

"While these standards will provide a high level of protection to structures in this development, and should reduce or eliminate the need to order evacuations, there is no guarantee that compliance with these standards will prevent damage or destruction of structure by fire in all cases."

⁷ Webster, Joan; The complete bushfire safety handbook; Random House Australia; Sydney; 2000.

⁸ Country Fire Authority; Community fireguard – guidelines for groups; Erwins Printing, Dandenong, VIC, Australia; 2004. . <http://www.cfa.vic.gov.au>

⁹ Mitchell, Joseph W.; Playing with fire – the county's Shelter-in-Place gamble; San Diego Union-Tribune; May 2, 2007; p. B7.

¹⁰ Mitchell, Joseph W. and Oren Patashnik; Firebrand Protection as the Key Design Element for Structure Survival during Catastrophic Wildland Fires; Fire and Materials 2007, San Francisco, Jan. 2007. Available at: http://www.mbartek.com/FM07_FirebrandsWildfires_1.1F.pdf

So what if the “case” in which a structure is damaged or destroyed is the case of an *occupied* structure? The Australian method for dealing with this contingency is two-fold:

- People who shelter are fully aware that the prevention of structure ignition is *their* responsibility, and they are equipped and prepared to take actions to put out ignitions that threaten the structure.
- In the case that a fire gets out of hand, they will “just step outside”¹¹. This relies on the timing of wildland fire. The passage of a fire front is extremely rapid, and will seldom last more than 15 minutes. Most structures – especially those with defensible space and good vegetation management – ignite *after* the passage of the front. Furthermore, it takes time for the ignitions to grow to the point where occupants are threatened, and by this time the external fires will have abated.

Neither of these measures would seem to be practical for the Salvation Army’s proposed SIP structure, nor is either one part of San Diego’s “Shelter-in-Place” program. There is no provision for training Army staff in firefighting techniques, and the presence of potentially 1,300 sheltering guests precludes rapid evacuation.

Another important element of Australian guidelines is the emphasis that only able-bodied and healthy adults should remain in the area of a wildland fire. The elderly, infirm, and children are recommended for early evacuation – preferably even before the fire starts, when hazardous fire weather conditions are present. In fact, two studies of the psychological impact of wildland fire on children have been conducted in Australia.^{12,13} These indicate that over 10% of children experiencing a wildland fire close hand will experience severe, long-lasting, and debilitating post-traumatic stress effects. Additionally, the effects of smoke, heat and stress on visitors with health conditions could lead to casualties.

Finally, during the recent October Firestorm of 2007, mass evacuation of Ramona was ordered by the authorities. No exceptions were made. In the case of the Salvation Army, it could be expected that a mass evacuation order, if given, will apply to the facility and therefore evacuation will be subject to direct order with legal consequences for noncompliance. Therefore, the proposed “Shelter-in-Place” scheme put forward by the applicant may actually never be used and instead the residents of Mussey Grade Road south of the facility would be impacted in a catastrophic wildland fire event by evacuees leaving the facility

2. The safety of current fire codes is overstated

¹¹ Harrap, Keith; Asst. Commissioner AFSM; Evacuation – Strategic withdrawal or abandoning the community; Wildland Fire 2004; March 3-5; Reno NV; *during oral presentation*.

¹² McFarlane, A.C.; Posttraumatic Phenomena in a Longitudinal Study of Children Following a Natural Disaster; *Journal of the American Academy of Child and Adolescent Psychiatry*; 26, 5:764-769; 1987

¹³ McDermott B.M. , Lee E, Judd M, Gibbon P; Posttraumatic Stress Disorder and general psychopathology in children and adolescents following a wildfire disaster; *Canadian Journal of Psychiatry* 2005;50:3 137-143.

On p. 24 of the FPP, the authors state that: *“A very low percentage of homes (3%) build according to 2001 or newer codes were lost in the County during the Cedar fire. Maintenance facilities on-site are metal-sided and fire proof.”*

The 3% value often stated for homes lost in the Cedar fire is a specious (though common) use of this statistic. It has never been published in a peer-reviewed journal or formally analyzed and its use in this manner is deceptive. The overall pool from which this value was determined has never been properly defined. Three per cent of all homes in the County? Three per cent of homes in the fire perimeter? Three per cent of all homes exposed? If it is used to imply that 97% of homes built with 2001 or newer codes will survive extreme fire exposure, this would be a very dangerous and very likely incorrect assertion.

One example that is completely inconsistent with this assertion would be the case of Mahogany Ranch Road, which is directly across Mussey Grade Road from the Salvation Army facility. This was a new development in 2003, with homes constructed under the new fire codes, all of which had mandated defensible space perimeters. Roughly half of the completed homes were destroyed in the Cedar fire, not significantly different from the 60-70% loss rate in the neighborhood as a whole. From a statistical standpoint, it is virtually impossible that this would be an “accidental” fluctuation from a 3% base probability.

3. Site location is not ideal for safe resident evacuation

On p. 6 of the FPP, the Salvation Army offers the Shelter-in-Place facility as a community resource:

“Mussey Grade Road area to benefit from the surplus of available shelter, and they would be welcome to temporarily relocate to this structure during a wildfire emergency.”

A wildfire shelter facility for lower Mussey Grade Road might be useful, but the facility is located near the northern end of the at-risk area. Residents who have evacuated as far as the Salvation Army entrance are almost out of the danger area, and driving into the camp facility would expose them to further risk.

The SIP structure is nearly a mile by road from the Primary Access of the camp. The Map in Appendix E of the FPP clearly demonstrates that nearly 1,500 feet of this distance is within 100 feet of hazardous vegetation. Hence, this would not be a recommended escape route unless there was no immediate threat of being overrun by fire. If traffic entering the facility were to become backed up or blocked under wildland fire conditions, a mass casualty event could result. Comparing this with Appendix C of the FPP shows that the camp entrance is only about one mile from the more developed northern area of Mussey Grade Road which has much less native vegetation and presents significantly less fire risk. Therefore, the better choice for an evacuee who has made it as

far as the Salvation Army facility entrance would be to continue northward and leave the area entirely.

In the event that a large number of residents decided to shelter at the facility, there will need to be a plan that would accommodate additional parking, assuming that the facility was at full occupancy and that the parking lot already contained 300 vehicles of Salvation Army guests. In order for this facility to be safely advertised as a shelter for the neighborhood, it needs to clearly specify how many extra vehicles the facility could accommodate under emergency conditions and where these vehicles would park.

A shelter facility specifically designed *for* Mussey Grade Road residents would ideally be located further south, where it would be more readily accessible to the bulk of the community. Relocation to the Salvation Army facility would only be a good recommendation in the case of total blockage of the Mussey Grade Road egress. Even then it would only be advisable for 1) people who do not have defensible structures or 2) family members incapable of helping to defend a residence during wildland fire.

Some Mussey Grade residents might intend to shelter at the facility and then return to defend their homes after the passage of the fire front, since local experience has demonstrated that many homes burn long after the fire front passes (a result fully consistent with wildland fire science). It should be made clear to people who might use the facility for sheltering that access roads to the facility and Mussey Grade Road itself are in oak-riparian areas, and that when oaks burn they can burn hot for a long time, so it cannot be assumed that it will be possible to safely exit the facility until long after the fire has passed through. Vehicle survival also cannot be assumed.

Suggested plans for offering the Salvation Army proposed expanded facility as a neighborhood “Shelter-in-Place” destination ignore the reality of wildland fire conditions for this area and the attendant traffic and other risks that would result. Even if a plan is developed for accommodating hundreds of additional vehicle and provisions are made to restrict movements of evacuees once at the facility, there would be no assurance that additional traffic problems would not ensue and at the same time Mussey Grade Road residents would still be subject to the same risks posed to facility guests and which are considerable.

⇒ *The Salvation Army facility should not be proposed as a neighborhood evacuation point in the FPP unless all problems are adequately addressed, including provision for additional parking of hundreds of vehicles.*

B. Assumptions about fire conditions

1. Inadequate wind values were used for fire modeling

Fire modeling using FlamMap was performed for the facility, and the results are presented on pp. 22-23 of the FPP. However, it uses only values of 12 mph, 18 mph and 24 mph for wind speed in the calculations of flame lengths and safety zones. This range

of values is not adequate to deal with Santa Ana wind conditions expected over the lifetime of this facility.

The FPP itself states on p. 13 that winds can gust up to 50 mph or higher during Santa Ana events. The ratio of wind gust speed to continuous wind speed is generally taken as 1.6 for engineering purposes.¹⁴ This would imply that by its own reckoning, values greater than 32 mph should be used in Salvation Army modeling. However, engineering safety considerations and recent history teach that this would not be sufficient either.

Weather data from the Goose Valley weather station recorded continuous wind speeds to 35 mph and gusts to 55 mph during the Santa Ana event that led to the October 2007 firestorm.¹⁵ This is the closest RAWS weather station to the Salvation Army property with similar topography.

A standard engineering practice for projecting future “worst-case” wind speeds is to take wind history from a variety of weather stations and apply standard statistical models (now codified in software programs) to calculate the strongest wind speed expected for a given return time¹⁶. San Diego Gas & Electric Company (SDG&E) has performed such an analysis for the Ramona area as part of their “Sunrise Powerlink” transmission project proposal. For the design of this project, they are estimating that for a 50-year return time, they could expect to see continuous wind speeds of 50 mph with gusts up to 80 mph.¹⁷

“Worst-case” conditions may very well be associated with wildland fires that would overrun the camp. In fact, review of the Goose Valley weather station data reveals that the two strongest wind events recorded in roughly seven years of operation were both associated with major wildland fires. One of these fires overran the Salvation Army camp (2003 Cedar Fire), while the other surrounded the entire Mussey Grade neighborhood on three sides (2007 Witch Fire). Hence it is only prudent to assume that if the Salvation Army facility faces fire encroachment in the future, it will be under similar high-wind conditions.

⇒ ***The BehavePlus fire modeling used to calculate flame lengths should also use 35 mph and 50 mph wind speeds as input values. Additional FlamMap runs such as shown in Appendix E of the FPP should be generated for these higher wind values and new maps generated. Adjustment to planned facility layout should be made based upon the results.***

¹⁴ California Public Utilities Commission; CPUC Phase 2 Testimony for A.06-08-010; SDG&E Sunrise Powerlink Project; Exhibit MG-30; SDG&E Response to MGRA Data Request #6. Can be found at: <http://www.sdge.com/sunrisepowerlink/info/MGRADR6Responses3-3-08.doc>

¹⁵ Mesowest; The University of Utah Department of Meteorology; provides graphical interface to weather station data archives; <http://www.met.utah.edu/mesowest/>

¹⁶ CPUC Exhibit MG-30; Data Request #6 3/3/08 response.

¹⁷ California Public Utilities Commission; A.06-08-010; SDG&E's 03/19/08 Responses to MGRA Data Request #6; available at: <http://www.sdge.com/sunrisepowerlink/info/MGRADR6Responses3-19-08.doc>

2. Fire services response time to the facility is underestimated

On p. 17 of the FPP, the plan quotes the Ramona Fire Marshal as stating that the time for fire services to reach the entrance of the facility would be 4 ½ minutes. The FPP's own calculation implies that 5 ½ minutes is more likely. Both of these are, from a practical standpoint, underestimates.

Once at the Facility entrance, the fire services would need to access the location of the emergency on secondary roads, sometimes unimproved. The FPP needs to specify response times to: 1) the "Shelter-in-Place" facility, and 2) the edge of the most distant structure's fuel modification zone.

The Alliance is able to roughly estimate these response times. Using the map in Appendix E, the distances to the SIP structure would be 4,500 feet and to the edge of the fuel modification zone of the most distant structure would be 9,500 feet. Assuming that 20 mph would be the maximum safe speed on unimproved roads, the response times would increase by 2.5 minutes to reach the SIP structure and 5.4 minutes to reach the furthest structure.

The total – up to 8 minutes for the SIP facility and 11 minutes for structures on the periphery of development, exceeds the Emergency Response Travel Times criteria set by county guidelines.¹⁸ For intensive development such as found at the Salvation Army facility, these specify that a 5 minute response time must be possible for "*Single-family residential lots of less than two acres, or **more intensive uses such as multi-family residential**. Includes all industrial development and all commercial development except neighborhood commercial.*" Furthermore, "*Emergency Travel time is defined as the estimated time it will take for a responding fire station to **reach the furthest structure in a proposed development project**. Travel time is determined by measuring the most direct reliable route with consideration given to safe operating speeds for heavy fire apparatus.*"¹⁹ [Emphasis added]

Furthermore, the estimates of travel times provided by the FAHJ are for reaching the *entrance* of the facility. On p.17 of the FPP, it is stated "*The Project Availability Form (Appendix D) provided by the Ramona Fire Department (June 2006) provides the Fire Department input regarding response time. The form states that*" ... "*...The expected emergency time to the proposed project is 4 ½ minutes.*' According to calculations, a linear distance of 19,536 feet from Fire Station No. 82 **to the camp's entrance** would require an average response speed of just less than 50 mph for a 4 ½ minute response time. It is estimated that the average speed would be closer to 40 mph, resulting in an estimated response time of 5.5 minutes."

¹⁸ COUNTY OF SAN DIEGO GUIDELINES FOR DETERMINING SIGNIFICANCE AND REPORT FORMAT AND CONTENT REQUIREMENTS; WILDLAND FIRE AND FIRE PROTECTION; LAND USE AND ENVIRONMENT GROUP; Department of Planning and Land Use; Department of Public Works; March 19, 2007; p. 20. <http://www.sdcounty.ca.gov/dplu/docs/Fire-Guidelines.pdf>

¹⁹ Ibid.

- ⇒ *The FPP needs to specify response times to the edge of the most distant structure as per Guideline requirements.*
- ⇒ *If response times to the most remote structure of less than five minutes cannot be met, and suitable mitigation cannot be obtained from the FAHJ, the project should be denied as per instructions in County Guidelines for Determining Significance.*

C. Structural safety issues

1. Interior sprinklers are not effective in preventing wildland fire ignitions

The FPP states on page 7 that:

“each structure will contain interior sprinklers which will assist responding firefighting personnel by minimizing resource allocation on the camp site.”

This statement inadvertently illustrates the fallacy of applying the county’s SIP paradigm to this project – notice the assumption that firefighters will be present onsite. Unless they are able to arrive before passage of the fire front, firefighters would have to pass a gauntlet of two miles of burning oaks and chaparral to reach the SIP structure.

Additionally, there is no scientific evidence to our knowledge that suggests that interior sprinklers have any value in preventing ignition under wildland fire conditions. If any exists, it should be cited by the applicant in their final EIR. Standard residential sprinklers are heat-triggered, and in order for them to activate a substantial fire must already be present in the building. Furthermore, most residential sprinklers are not intended for fire suppression but rather for slowing fire growth to allow safe evacuation of the structure.²⁰ The sole plausible argument that would support the county’s promulgation of residential sprinkler systems preferentially in high fire-risk areas is that by slowing structure ignition, they could make it less likely that a structure fire will ignite neighboring vegetation before the fire services arrive. While also lacking scientific evidence, this argument certainly doesn’t apply in the case where a massive firestorm is bearing down on the neighborhood.

Since fires might be detected by sheltering staff or guests before the heat is sufficient to trigger the sprinkler system, it is critical to prevent panic that on-site staff be able to trigger the sprinkler system within the SIP structure.

- ⇒ *In order to be of any benefit, the sprinkler system in the SIP structure, at the least, must be capable of being activated manually from within the SIP structure itself.*

²⁰ Hofmann, Anja, and A. Beard; Modeling Fire Scenarios in Residential Buildings with Respect to the Benefit of Smoke Detectors and Flame Retardants in High Risk Items; Fire and Materials, 2007; Jan. 29-31, 2007; San Francisco, CA. During oral presentation.

2. No allowance is made for safe evacuation of 1,300 people from the “SIP building” in case of its ignition

There is no provision in the Fire Plan as to how contingencies would be handled if the SIP building itself is compromised and an ignition occurs in an inaccessible area. While structure evacuation is considered a “last resort” contingency during Australian sheltering, no planning has been done to enable the evacuation of 1,300 people from the Salvation Army SIP facility and to get them to a safe area in the event that the fire front has already passed.

- ⇒ *Design of the SIP structure should allow for rapid evacuation of 1,300 people in the case that the building is compromised and ignites. Contingency plans should be in place for evacuation routes and alternative assembly sites.*
- ⇒ *Camp staff should receive training from RFD in the use of firefighting equipment.*

3. No allowance is made for protection from smoke, which can harm sensitive individuals.

No mention has been made for provisioning the facility to resist smoke, or provisioning visitors with protective gear, or to care for multiple residents having breathing problems, eye injuries, or emotional trauma.

- ⇒ *Building design should prevent the entrance of smoke and ash.*
- ⇒ *Sufficient first aid equipment should be available to handle multiple casualties, and staff should have advanced training. Only non-flammable dust masks should be available.*

4. Restrictions on venting are inadequate

On p. 37, safety measure #8 calls for special venting to be used on the side of the structure that faces vegetation. This is insufficient. Under severe fire conditions, embers will be carried throughout the camp by strong winds, and buildings not immediately facing the vegetation areas will be exposed. While there will be a predominant wind direction (usually between east and north), this may vary significantly as the passage of the fire front creates its own conditions. Furthermore, embers may be deposited by eddies on the leeward side of buildings.

- ⇒ *Hence, where vents must be used, low-profile wire mesh vents should be used for all construction.*

On p. 38, safety measure #10 discourages the use of turbine fans.

- ⇒ *Use of turbine fans should be expressly forbidden.*

D. Human behavioral and resident safety issues

1. The facility administrator would have life/death decision-making authority for all of Mussey Grade Road.

On page 45 of the FPP, there is discussion of the process by which the decision to evacuate or shelter would be made in the event of a quickly moving nearby fire. While the facility director would consult with the Ramona Fire Department if possible, and would receive training for this contingency, *both* the RFD and the director will be working under the mistaken assumption that an evacuation would result in a low impact to Mussey Grade Road if the incorrect traffic study in this RDEIR is accepted.

The camp director would need to make a life-and-death decision for all residents of the Mussey Grade neighborhood, not just those he or she is responsible for in the camp. Conditions may arise which would force a choice between the best interests of camp occupants and the interests of Mussey Grade Road residents. An example would be a fire impacting southern Mussey Grade Road and progressing up the canyon, as the Cedar fire did in 2003. It is possible that there would be time for a safe evacuation of the facility, and this is the preferred option according to this plan. While the facility occupants could shelter in the facility, they will be safer, more comfortable and have more options if relocated to an area unlikely to be directly affected by the fire – so there will be a bias to evacuate, adding to by the misimpression given by the current traffic study.

However, if evacuation of the facility impedes evacuation of risk areas to the south, it could be deadly for Mussey Grade Road residents. The camp director would need to have correct information regarding the fire and the risks it posed, and would need to make a correct decision that balances the needs and well-being of the people for whom he or she is responsible for (the camp residents) against the needs of people for whom he or she has no responsibility (the Mussey Grade Road residents). For the sake of emergency planning, we cannot assume that the correct decision will necessarily be made. In fact, for safety we must assume the opposite.

⇒ *A “wrong decision” by the camp director regarding evacuation must not put the evacuation of Mussey Grade Road residents at risk. No scenario in which residents might be entrapped should be possible.*

2. Planned measures will not prevent a mass exodus from the facility

To address concerns raised by Alliance members, a section has been added to the Fire Protection Plan on pp. 47-48 that discusses the measures that would be taken to prevent the camp guests from making their own decision to relocate *en masse* in the event of a wildland fire. While these measures may be completely moot by an order to evacuate, as past recent history suggests, the Alliance has, nevertheless, examined the evacuation plans of the applicant. Guests would: 1) have to sign a document that they may be precluded from using their cars, and 2) receive orientation to the Shelter-in-Place

features of the facility. These are primarily educational in nature and are not sufficiently restrictive, as is a third measure that would have staff “*proactively gather individuals and direct them to the Shelter-in-Place site and away from parking areas*”.

Education will not necessarily be sufficient to prevent visitors from leaving the facility. It is good to think of sheltering as an abstract concept, but it is impossible to know what people will do when faced with a real emergency in a real wildland fire. This goes for the facility staff as well. Few if any will have had direct experience with wildland fire, and it is unlikely that any of them has ever sheltered through one before or even knows anyone who has – this is a new concept in the United States. Furthermore, the very strong emphasis by emergency services is currently on *evacuation*, most dramatically demonstrated during the October 2007 fire storm which had nearly half a million people under an evacuation order.

People will also be hesitant to leave their vehicles to burn, and this will create a strong incentive for them to stay. In fact the issue of vehicle ignition has not been addressed. Vehicles will remain at risk and may be lost in a mass conflagration in the parking lot. This has been recognized as a potential hazard during Shelter-in-Place operations, and its prevention can occupy emergency workers who could be otherwise engaged. This occurred during the siege of Barona Casino during the Cedar fire in 2003.²¹

⇒ ***During fire season, all visitors should be bused into the facility in order to reduce the risk of unauthorized evacuation in a fire emergency.***

3. Some children would experience severe psychological effects from close exposure to wildland fire

One important element of Australian guidelines is the emphasis that only able-bodied and healthy adults should remain in the area of a wildland fire. The elderly, infirm, and children are recommended for early evacuation. In fact, two studies of the psychological impact of wildland fire on children have been conducted in Australia.^{22,23} These indicate that over 10% of children experiencing a wildland fire close hand will experience severe, long-lasting, and debilitating post-traumatic stress effects.

⇒ ***Identification of visitors with health or emotional conditions that could prevent them from sheltering safely should be made prior to or at the time of their arrival at the facility. Sensitive persons should be given priority for evacuation.***

²¹ Halsey, Richard W; Fire, Chaparral, and Survival in Southern California; Sunbelt Publications; San Diego; 2005; pp. 52-53.

²² McFarlane, A.C.; Posttraumatic Phenomena in a Longitudinal Study of Children Following a Natural Disaster; Journal of the American Academy of Child and Adolescent Psychiatry; 26, 5:764-769; 1987

²³ McDermott B.M. , Lee E, Judd M, Gibbon P; Posttraumatic Stress Disorder and general psychopathology in children and adolescents following a wildfire disaster; Canadian Journal of Psychiatry 2005;50:3 137-143.

4. The onsite smoking prohibition could ironically lead to surreptitious smoking in risk areas

On p. 25 of the FPP, the plan notes that smoking will be forbidden at the Salvation Army facility. While this might be thought of as a positive measure, it ironically presents a problem as well. Nicotine is addictive, and smokers may look for private and secluded places to practice their habit. Unless these people exercise good judgment – and some might be children so we must assume that this will not be the case – they may go off into the brush where they won't be seen in order to smoke.

While its own staff might be expected to adhere to a smoking ban, the Salvation Army will occasionally need to hire contractors and vendors to do work on the property. It is reasonable to assume that some fraction of these will be smokers, and not all of these will willingly adhere to the smoking ban.

As noted in our 2005 comments on the preliminary RDEIR, the significant increase in the size of the camp and its proposed layout will mean that children will not have the same level of supervision that they have had up to now. The greater physical separation of facilities for children and camp counselors increases the chance that the occasional child or teen might be tempted to go “sneak a smoke”. If they were to seek privacy in a vegetated area, this could very well be disastrous. The point here is that no-smoking rules will not suffice to prevent smoking and the danger of smoking adds to the overall fire danger.

E. “Same practical effect” is not achieved

The project and its FPP do not currently meet the criteria for “same practical effect” that would allow it to avoid the requirement for a secondary access, as it states as its goal on p. 50. The reasons have been detailed elsewhere, but are summarized again here:

- Measures stated in the FPP will not prevent the evacuation of the facility at the same time that residents are trying to evacuate from southern Mussey Grade Road.
- Measures stated in the FPP will not prevent facility guests or residents from leaving of their own accord during a wildland fire emergency
- Measures stated in the FPP will not guarantee a correct decision by the facility supervisor in the event of a wildland fire emergency.
- Evacuation may not be at the discretion of the camp director but instead be ordered by authorities.
- Emergency response times to the key facilities and the most remote structure on-site are not within the 5-minute limit set by County guidelines for intensive development. Measurements provided by the FAHJ measure response times only to the *entrance* of the facility, and these are at the limits of permissible transit time.

Furthermore, *no mitigation measures have been proposed or approved to compensate for the inability to meet this requirement. According to the Guidelines: “If the appropriate emergency travel time cannot be met for a*

proposed discretionary project, the project will be denied unless sufficient mitigation measures are included as a basis of approval based on the recommendations of the Director of Planning and Land Use and the Fire Authority Having Jurisdiction (FAHJ).” It might be argued that the approval already provided by FAHJ already satisfies the requirements. This is not true – this approval was issued in June, 2006, ***before*** the new County guidelines were in effect. If the Salvation Army wishes to grandfather this approval in, they would need to argue to do so under the old rules – which require secondary access. It should not be permissible to “mix and match” definitions and approvals from the old and new County codes and guidelines. The guidelines that allow for “Shelter-in-Place” assume that the increase in risk resulting from the decision to remain within a wildland fire zone can be mitigated for or even reduced by adhering to an additional set of strict requirements. ***All of these pre-conditions creating “same practical effect” must be met before a Shelter-in-Place option can be approved. This includes an emergency response time of less than five minutes to the most remote structure on the property or other mitigation approved by the FAHJ.***

- Fire modeling used to assure safety of SIP structure did not use realistic “worst case” conditions. According to County guidelines for determining “same practical effect”, worst case assumptions *must* be used for fire modeling: *“The Fire Model will evaluate a **worst-case scenario** wildland fire event based on site topography, fuel loads, **atmospheric conditions**, and maximum heat production. From the results of the model, combined with the consultant’s expertise, minimum fuel modification and brush clearance distances can be determined to ensure relatively safe building sites.”*²⁴
[Emphasis added]
- Safety of the facility guests and residents is not guaranteed at the same level as if they were safely out of the fire zone:
 - No contingency planning has been done regarding the ignition of the SIP structure with residents inside.
 - No allowance has been made for safe evacuation of the SIP structure.
 - There is no plan to accept additional vehicular traffic beyond the facility’s capacity if Mussey Grade residents decide to shelter there.
 - Residents & guests will be exposed to significant smoke which will affect sensitive individuals.
 - Residents & guests may be exposed to stress which can have lasting effects in sensitive individuals.

²⁴ COUNTY OF SAN DIEGO GUIDELINES FOR DETERMINING SIGNIFICANCE AND REPORT FORMAT AND CONTENT REQUIREMENTS; WILDLAND FIRE AND FIRE PROTECTION; LAND USE AND ENVIRONMENT GROUP; Department of Planning and Land Use; Department of Public Works; March 19, 2007; p. 19. <http://www.sdcounty.ca.gov/dplu/docs/Fire-Guidelines.pdf>

- ⇒ *The secondary access requirement requested by the Ramona Municipal Water District should be a prerequisite condition for approval of the proposed expansion.*

- ⇒ *If no mitigation measures are proposed that meet the criteria specified by the County Guidelines for Determining Significance, the project should be denied.*

REFERENCES

California Public Utilities Commission; CPUC Phase 2 Testimony for A.06-08-010; SDG&E Sunrise Powerlink Project; Exhibit MG-30; SDG&E Response to MGRA Data Request #6. Can be found at:

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Mitchell, Joseph W. and Oren Patashnik; Firebrand Protection as the Key Design Element for Structure Survival during Catastrophic Wildland Fires; Fire and Materials 2007, San Francisco, Jan. 2007. Available at:
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Appendix A

Letter from Ken and Joanne Gamble

During the Cedar Fire of 2003, we decided to go back down Mussey Grade Road later that morning to see what we could do. Firemen, who would not venture down the road, stopped us. The road was too dangerous for firemen and so they were keeping people out. On a road where even firemen do not venture during a fire, why would the county approve the expansion of a retreat center to allow hundreds of more people there?

Mussey Grade Road has a greater traffic problem now than when the traffic study was done by the Salvation Army in the spring of 2004, because Mussey Grade Village, a transient housing-resort type community along MG Road, has higher occupancy now than in the spring of 2004 and the owner is not kept in check by the code compliance department.

Since 2003, the owner of MG Village has placed some 20-30 Park Model RVs, in 90-day, max-occupancy RV sites and continues to rent out to people on a permanent basis, year round. After the fire, many singlewide mobile homes and Park Model RVs were burned and the tenants were forced out by the owner, thus creating a dip in density for a period of about a year. In the recovery year, the owner replaced all the Park Model RVs and placed new, doublewide and triplewide modular homes in the park, attempting to make the resort into a high-end mobile home park, rather than the transient-resort it is permitted to be. Since the fire, I would estimate that the population at MG Village has doubled.

During the Mandatory Evacuation of the Witch Creek Fire of 2007, we were stopped at the Laurel Lane/Mussey Grade Road intersection by a fallen oak tree. Traffic had backed up in both directions while a crew of 6 men and a bulldozer attempted to remove it. Once it was removed, the cars were able to resume normal speeds quickly because there were not that many cars backed up. If more cars are added to this type of situation the back up could be a life-threatening situation.

Ken Gamble and Joanne Gamble
19510 Laurel Lane
Ramona, CA 92065

Appendix B
See attached file "MGRA_SA08_AppB_SafetyReqsRevised06.doc"

Appendix C

The following excerpt is from the un-redacted transcripts of the Ramona Municipal Water District Cedar Fire hearings, held in January 2004:

Ramona Municipal Water District Cedar Fire Hearings, January 2004.
<http://www.musseygraderoad.org/CedarIndex.htm> ; also available in original audio format from the Ramona Municipal Water District, 105 Earham Rd., P.O. Box 1829, Ramona, CA 92065, USA.

This excerpt of testimony is from Beverly Hasting of 16425 Mussey Grade Road, and was given during Session 3, on January 29, 2004.

Beverly Hasting: This is about 7:00ish, we finally got out of there about 7:00, 7:30 and we got in the long line on Mussey Grade with everybody going three miles an hour, some people holding their horses and walking them and it took, and I have to say, and I've mentioned this before, we all must have learned something in elementary school, don't panic, don't run because you should have seen everybody on Mussey Grade Road, everybody had things packed up and were in an orderly manner just like we were in grade school.

Bob Krysak: So the road was pretty crowded at that point with people leaving?

Beverly Hasting: We were bumper to bumper.

Bob Krysak: Were they using both lanes at that point to evacuate or just the one that was...

Beverly Hasting: One going out and we never saw anything going in, except maybe some of the people that decided to go back and get more stuff.

Doug Hasting: People were trying to get back...

Beverly Hasting: And we were on that road at least a good 35 minutes, 40 minutes till we got to the end and then the next thing I knew I heard it's burned, their gone and the trailer park was gone and then it wasn't until the next day that I found out mine was gone....

Appendix D

See attached file “MGRA_SA08_AppD_Mitchell_CV.doc”